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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/527,634	03/17/2000	Sun Man Lo	10262-013100US	3050

7590 02/24/2003

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EXAMINER

SORRELL, ERON J

ART UNIT

PAPER NUMBER

2182

DATE MAILED: 02/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/527,634

Applicant(s)

LO ET AL.

Examiner

Eron J Sorrell

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 19 December 2000 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheet of the drawing, filed on 12/19/02 has been approved.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Messerly et al. (U.S. Patent No. 6,381,661 hereinafter referred to as Messerly).

4. Referring to claim 1, Messerly discloses an apparatus comprising:

a first-in first-out (FIFO) buffer (see lines 4-18 of column 4);

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a circuit for detecting the last word transmitted from the FIFO buffer (see lines 35-39 of column 4);

a transmitter empty circuit for generating a transmitter empty signal on a transmitter empty control line when a last word transmitted from the FIFO is detected (see lines 11-35 of column 7);

a delay circuit for delaying the generation of the transmitter empty signal for a programmable delay time (see lines 51-67 of column 6, lines 1-10 of column 7, and lines 50-67 of column 12 and lines 1-21 of column 13); and

a programmable register for setting a programmable delay time (see lines 51-67 of column 6 and lines 1-10 of column 7).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly.

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7. Referring to claim 2, Messerly et al. teaches using an internal transmitter empty signal (see lines 35-39 of column 4).

Messerly et al. fails to teach the transmitter empty signal being triggered from the stop bit of the last word.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to configure the UART of Messerly et al. such that the transmitter empty signal is triggered by the stop bit of the last word because it is common practice in asynchronous communication to use a stop bit to indicate the end of a data word. When the last stop bit is detected the transmitter empty signal can be generated.

8. Referring to claim 5, Messerly et al. discloses a UART that can operate with a range of word length including a 4-bit word length (see lines 6-16 of column 5).

Messerly et al. fails to disclose the programmable register being 4-bits in length.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. such that the programmable register is 4-bits in length because Messerly suggests that this modification can be made.

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9. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly in view of Abromson et al. (U.S. Patent No. 6,212,609 hereinafter referred to as Abromson).

10. Referring to claims 3 and 4, Messerly fails to disclose the programmable register comprising a shadow register which is a write-only register with the same address as a read-only register only read by a user.

Abromson discloses that it is common in the art to have write-only and read-only correspond to the same addresses (see lines 21-31 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the apparatus of Messerly with the teaching of Abromson such that the programmable register comprising a shadow register which is a write-only register with the same address as a read-only register only read by a user. One of ordinary skill in the art would have been motivated to make this modification to reduce the overall address space required for the apparatus.

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11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al in view of Michael (U.S. Patent No. 5,140,679).

12. Referring to claim 6, Messerly et al. discloses that the delay circuit and the programmable register is a single circuit and a register connected to control the delay (see lines 52-67 of column 6 and lines 1-10 of column 7).

Messerly et al. fails to teach the UART having a plurality of channels, each having a FIFO buffer and a circuit for detecting the last word.

Michael teaches a UART comprising a plurality of channels, each channel having a FIFO buffer and a circuit for detecting the last word (see lines 14-17 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. to comprise multiple channels as in the UART disclosed by Michael. One of ordinary skill in the art would have been motivated to make this modification so the UART disclosed by Messerly et al. could be used to transfer data to a plurality of devices simultaneously.

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13. Claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Messerly et al. in view of Micheal as applied to claim 6 above and further in view of Abromson.

14. Referring to claims 7, the modified UART of Messerly as applied to claim 6 above fails to teach the programmable register comprising a shadow register which is a write only portion of a register only read by a user.

Abromson discloses that it is common in the art to have write-only and read-only correspond to the same addresses (see lines 21-31 of column 1).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the apparatus of Messerly with the teaching of Abromson such that the programmable register comprising a shadow register which is a write-only register with the same address as a read-only register only read by a user. One of ordinary skill in the art would have been motivated to make this modification to reduce the overall address space required for the apparatus.

15. Referring to claim 8 and 9, Messerly et al. discloses a UART that can operate with a range of word length including a 4-bit word length (see lines 6-16 of column 5).

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Messerly et al. fails to disclose the programmable register being 4-bits in length.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the UART of Messerly et al. such that the programmable register is 4-bits in length because Messerly suggests that this modification can be made.

16. Referring to claim 10, Michael discloses a UART comprising at least 8 channels (see lines 19-28 of column 4).

Response to Arguments

17. Applicant's arguments filed 12/19/02 have been fully considered but they are not persuasive. The applicant argues: 1) Messerly is not directed toward a UART, but rather to an interface between a UART and a host DSP and 2) The programmable delay register and the delay circuit of Messerly differ in functionality compared to the instant application. The arguments with respect to the Tobias reference, applied to claims 7-10, have been fully considered, however are considered moot in view of the new grounds for rejection.

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18. **As per argument 1**, Although Messerly **is** (emphasis added) directed toward an interface device between a UART and a host DSP, it is the position of the Examiner that the interface device of Messerly comprises the same structural elements as set forth in the body of claim 1 and performs the same functions.

19. **As per argument 2**, The Examiner disagrees. Regarding the delay circuit, Messerly discloses that values in the DIVL register are used to compute values that control the generation of the transmitter hold register empty flag (see lines 50-67 of column 12 and lines 1-21 of column 13). Regarding the programmable delay register, Messerly discloses that values are written into this register from the host processor (see lines 10-21 of column 8) and these values, as mentioned above, are used for calculations needed for controlling the transmitter. The fact that the DIVL register is written to by a host processor suggests programmability.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is

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reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eron J Sorrell whose telephone number is 703 305-7800. The examiner can normally be reached on Monday-Friday 9:00AM - 5:30PM.

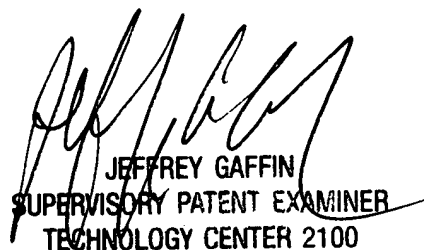
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffery A Gaffin can be reached on 703 308-3301. The fax phone numbers for the organization where this application or proceeding is assigned are 703 746-7239 for regular communications and 703 746-7238 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

EJS

February 20, 2003



JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
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